1: Spier E-5 (1918) 1928
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in 1897, less than 300[1]; 1899, 261[2]; 1902, 233; 1903, 237; 1905, 174; 1906, 166 (?); 1907, 172. 161 174

The generation rate, i.e., the interval in years between parent's and child's birth, may be of interest. This is calculated from a revision of the agency census roll. 163

Average difference in years between father and child: 33.7 yrs (103 cases).
Average difference in years between mother and child: 28.2 yrs. (77 cases).
Average difference in years between parent and child: 31.4 yrs. (180 cases).

These Indians resemble the lower Colorado River tribes in general appearance, in build and physiognomy, more than the Navaho, Apache, and Zuñi. Hrdlička notes, however, that "they are physically identical with Apache." The stature of Walapai and Havasupai together is given by him as 168.4 cm. for men and 157.7 cm. for women.[4] There is a marked family resemblance within the group.[5] Their light complexions are noticeable; this has been remarked by Garcés, Cushing, and Smart.[6] 144 [141] [142]

Annual Cycle

A brief description of the yearly round of life will make the details of this sketch more coherent.[7] Early spring finds the Havasupai returning to the canyon from the plateau where they have spent the winter. By this time the snows have melted and they must descend to a water supply. The weather being still inclement some use is made of the caves or rock-shelters at the base of the cliffs while they repair the dirt covering of the houses in the fields below. Spring planting begins in the middle of April; meanwhile they live on corn taken from the little granaries in the cliffs and on mescal gathered from the red sandstone benches where it ripens in May. 221 [342]

Summer life is the fullest of the year. Everyone lives in the village, except for the few who are away trading Hopi and Navaho products with the Walapai or at Ornibi with buckskins of their own or Walapai manufacture. Morning finds the families in the fields; the heat of the afternoon (never excessive) is spent in the sweatlodge or at some favorite spot gambling and gossiping. Corn ripens throughout the summer, from [512]

[1] *Reports of the Commissioner of Indian Affairs*, 1897, 191; 1902, 163; 1903, 320, 1905, I, 191, 1906, 178; 1907, 177.
[2] *Statistics of Indian Tribes*, 37.
[3] This figure is probably incorrect due to a deficiency in the number of women of child bearing years (see p. 380). When the mothers are (artificially) old women, as in the case, the figure is too high. Because according to chance the younger children of such women would most frequently figure among the ones vivors than the older. (The longer the course of the children's life the greater the chance of their death
[4] Hrdlička, (g), 413.
[5] A peculiar configuration of the whorls of the ear is common.
[6] Coues, 341; Cushing, 346; Smart, 418.
[7] See also Spier (d).

1:Spier E-5 (1918) 1928
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221 [648] [439] the middle of June until September. When the harvest is abundant, invitations are sent to the neighboring Walapai, Navaho, and Hopi to join in the annual dance, a week of festivity. In the course of gambling and trading, another link is fixed in the trade route that runs from Oraibi and the Navaho settlements, through the Havasupai and Walapai, to the Mohave in the west.

The harvest in, mesquite and local seeds gathered, there is no further attraction in the canyon. In the middle of October the exodus to the plateau begins. By single families, or in groups of two and three, they go off to establish snug camps in the denser cedar thickets. These are semi-permanent, for they move from time to time as piñon nuts are reported growing thickly in one glade, wild seeds abundant in another locality, or hunting good near the mountains. When the snow falls, rabbits, deer, and antelopes are easier to track. During this season they live in part on corn which they have carried up from the canyon, and from time to time replenish from the granaries there. As spring comes they drift back, perhaps along the ledges of the Grand Canyon, to resume life in the village.

1: Spier E-5 (1918) 1928
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with holes opposite those in the first. (Actually the spacing is not very regular). Thus groups of plants grow about a meter apart in both directions. Fields are irregular in outline. Several men might plant one field, the others following the leader's spacing. They do not repeat the invocation. The land is irrigated about two days before planting. They begin to plant in the middle of April and finish two months later; the precise time depends on a man's whim. If corn is planted in the middle of May the shoots will appear after four days, but later planting requires five days. In a month it is half a meter high; it then receives a second watering. When the tassel appears after two or two and a half months it is given a third and last watering.[1] The attention required by the growing crop is not burdensome; of course the fields must be weeded, traps placed for the ground squirrels and rats who would otherwise uproot the corn, etc. The hoe is a wooden spade-shaped affair with a disproportionately long narrow blade with a handle in the same plane. This is used to scrape up the sand into ridges when irrigating and for scraping out weeds. The shoulder blade of a horse (never a deer) is also used for the latter purpose: this is held in the hands, not hafted. The corn ripens in about four months. Plants bear two and sometimes three ears to the stalk. Only the ears are collected, although the stalk with the ears attached is sometimes taken (for fodder?).

According to Sinyella there were only two varieties of corn before he was married (1860–70), then others were acquired from the Hopi. These two were *teyd'ijpa*", with kernels mostly red with a little white, and blue corn, both of which, but particularly the first, are accredited to the culture heroes. The modern varieties recognized are white, red, yellow, black, white and red (*n„mauighuadid*), white and blue (*n„sa-sá'vigwasá*), all of which are named by color, and black and white (*n„dádi*, spotted). A very small variety (*Zea aruglaca*), with ears about 12 cm. long, known as Mohave corn, is also grown, yielding ears in two months. These have been traded from the Mohave through the Walapai. The blue corn is planted first, because it ripens quickly. Each color is planted alone in a field, even in a large field which is given over to several varieties. The colors of adjacent varieties mix, but no reason is offered for this. One color is not preferred above another for its taste, but wafer bread is made of either white or blue, but not of mixed corn. Long, well formed ears are selected for seed. About twenty such are said to be needed to seed an acre, but this does not seem enough.

[1] Mr. Gossler, a first-rate farmer, tells me that this system of irrigation is proper: corn planted in late May matures in sixty to seventy-five days.

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away and the seeds scraped out and collected. After further drying, the flesh is sliced spirally from side to side, beginning at the stem end, in a strip 2.5 to 5 cm. in width. This coil, 1 to 1.5 m. long, is hung from a pole to dry in the sun. While it is still pliable, it is folded back and forth on itself into a bundle (*hamtekwt'ĭwa*), 30 to 45 cm. long, and bound with one end of the strip. This is set aside to dry thoroughly before it is placed in the storehouse for winter use. Squash so dried will keep through an entire year. Melons are also grown.

Sunflowers (*ak'ŏta*) are grown for their seed. Cotton (*Gossypium hopi* Lewton) is raised from seed obtained from the Hopi; the only use for this product is in the strike-a-light. The seeds of wild food plants are not planted; some, such as pigweed, grow in the fields. Peaches and figs, modern foodstuffs, are eaten fresh. Peaches are also torn in two and pitted, while figs are opened, before they are spread on the rocks to dry.

Two varieties of tobacco are known, *úsi*, and *kaŏŏ'da,lu'wa* (Coyote's tobacco; *Nicotiana trigonophylla* Dunal). Myth has it that the second was grown by Coyote for his own use. Both grow wild on the plateau and in the canyon above the village: their leaves are similar, but the smoke tastes somewhat differently, according to the natives. Tobacco (both varieties?) is grown only on the plateau. A mesquite tree is cut down and burned. The tobacco seeds are thrown into the dead ashes (the soil is not dug up). Willow is not used as a substitute.

Wild Food Products

These are a valuable adjunct to the food supply, especially from the autumn until spring during the residence on the plateau. During this period they lead a wandering life, families going off in the fall to a place where someone had reported piñon nuts lying plentifully on the ground; winter finds them to the east, hunting in the Coconino Basin, dropping down to the benches of the Grand Canyon in the spring for mescal, and so on. Women and children are sometimes left to gather seeds while the men go off to trade.

Mescal (the agave plant), which grows on the canyon benches, is ripe in May when the flower stalk is 30 to 60 cm. tall. The plant is severed entire by pounding a chisel-shaped buckthorn stick (*ŏŏp'ŏ'ĭ*) about 1 m. long, 3 cm. diameter, against its base. The outside leaves of the inverted plant are trimmed of their green portion with a special hatchet (*ágwidjá*). This consists of a broad stone blade set in a slot midway in the length of a short handle, 30 cm. long, (sometimes of piñon wood), where it is held fast with glue or pitch and by lashings. A load of

1:Spier E-5 (1918) 1928
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372 obtained from the Hopi. It is braided into a thick cord (*hâ'jûwâ'hwuwû*) 30 cm. long, and drawn through a tube (the hind leg bone of a wildcat) of half its length. When wanted the charred end is pulled out of the tube which protects it from dampness. The tinder and stones are wrapped together in their own case.[1]

It is quite as convenient to carry a slow-match (*akakwâkâ*) when traveling (Fig. 19). This is a rope of rubbed cedarbark, 2 cm. diameter

Fig. 19 (30.3-1391). A Slow Match of Cedarbark Rope.

and nearly 2 m. long, tied at short intervals with yucca leaves. It is carried in a coil, the smouldering end being blown on from time to time.

There is no great discrimination among fuels in the canyon for all the available materials are inferior (cottonwood, willow, sagebrush, cercocarpus, etc.). In fact, this is assigned as one reason for leaving the canyon in the winter; it is certainly too laborious to pack firewood from the plateau. Fallen trees and dead limbs are broken with heavy stones.

[221]
[412]

[1] Compare a ritual containing observed sections found by Perkins near the Verde Valley, Ariz., 474.

Bailiff Y-S (ca. 1961) 1964 NT14 Plateau Tumans NT14
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canyon several months, instead of the one month originally planned, because they could not find a man with the necessary qualifications who would accept the superintendency at the salary paid. Educators were not clamoring for a chance to work in a canyon, isolated even from the privilege of buying from a grocery store.

Later my appointment as principal teacher of the Truxton Canyon Training School for the Walapai came through. What an imposing title for a new boarding school out in the middle of the desert! I knew that the Indian Office had combed the woods for a qualified man, for the responsibilities of this position were much greater than I had carried in the day school. I knew, too, that the inspector's recommendation had tipped the scales in my favor.

My reports and the school were ready to be turned over to my successor, but before I left the canyon I had a chance to witness the final event on the Havasupai calendar.

As jealously as the Havasupai guarded their canyon and as passionately as they loved it, the tang of autumn in the air turned their thoughts to a winter home on the mesa, and started them packing their possessions with a happy abandon. All summer they had planned for this—harvesting, preserving their food, and setting aside a portion to take with them.

Even though it was depressingly hot, the employees as well as the Indians were obliged to work harder through the summer, so that this winter outing might take place. I had taught at Truxton until school was dismissed for the summer vacation, and had quite naturally expected to be free from such duties during July and August. But no; here I must hold school through the summer and fall so that the Havasupai children's vacation might come in the winter. Nothing could be permitted to interfere with this jaunt to the outside.

The Indians used various arguments to prove the necessity for the migration. They claimed that there was not enough wood in the gorge for their cooking fires and to warm their houses. Yet

Sedliff Y-5 (ca. 1901) 1954 NT14 Plateau Yumans NT14
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they had wood to sell. They needed the wild seeds, fruits and roots 221
that grew on top, they insisted. But, when I saw their childish delight as they made their departure, ponies loaded with cumbersome bundles, I knew that they were motivated by the very human desire for change, to get outside, where they could look about, with the full sweep of the vaulted sky above, with endless miles in which to wander.

Not an Indian who was physically able to ride but longed for this trip to the mesa. Only our policemen and the few persons needed to care for the sick and the aged stayed on through the winter.

It was a strange procession that finally departed up the trail. A single file of horses so encumbered by household equipment, clothing and food—all topped by a member of the family—that it looked like a train of bundles, walking off on four feet.

And what mysteries those bundles contained!

Near the village that fall I had watched a young woman glean 222
the ripe fruit from a sprawling bed of prickly pear cacti by catch- 262
ing the fruit between two gathering sticks, and with a quick twist break it free. After removing the spines by swishing the pear with a fiber brush, she tossed the clean pear into the burden basket on her back. At home any remaining spines would be wiped off [257]
before the fruit was split and laid in the sun to dry. She had approached her task fully prepared with gathering sticks, brush and burden basket. Tied in those huge bundles that obscured their ponies, I knew, were the crude, homemade tools they would use in gathering the many edible wild plants that grew up above.

The pigweed on the mesa should be a luscious bush loaded with small rich seeds. Its leaves, boiled, were eaten as a vegetable; the ripe seeds were toasted, ground and cooked into a mush. Mormon tea would be gathered, dried and stored to be brewed in a refreshing drink. The dry pods of the mesquite were sweet and nourishing; they were chewed for their food value or, reduced to a powder and mixed with water, used as a drink. Fall ripened the fruit of the yucca, which was an important food. After frost, the Indians

Bailiff T-5 (ca. 1981) 1964 NT14 Plateau Yumans NT14
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would comb the desert for the pinon nuts, oily and pungent, as they fell from the pine trees. The desert, which yielded its store of food to those who knew where to search for it, was ripe for the harvest.

Each day one or more groups climbed the trail, bound for Seligman to loaf about the trader's store, or for the pueblos of the Hopi or the scattered villages of the Walapai. They would denude the plateau of its food plants as they traveled. Laughing, shouting back merry good-bys to us, they climbed the trail. The canyon seemed full of empty houses.

From their talk I gathered a clear picture of their life on the upper level. They would kill an occasional deer or mountain sheep, if no white man were about; even without these there would be meat, for rabbits were plentiful. They satisfied their need for sweets by robbing bees' nests hidden in clefts in walls or in hollow trees. Long ago they had found a cave in a distant cliff that contained more rock salt than they could use. So with vegetables, meat, salt and honey in addition to the supplies they took with them, their needs would be satisfied.

When harsh winter set in, they would retire to their small, tight winter houses in the cedar thickets and live off their stored foods. One of the most delicious of these was the corn that had been roasted in the husk, while fresh and green, dried somewhat and stored. They would cook the ears in boiling water and the grains would have the sweetness of fresh corn.

Those who had not bothered to bring cooking pots, drew on the desert's reserve by burning the spines from a section of barrel cactus, removing the center pulp, and using the cavity for the old-time method of stone boiling. Accustomed to making the most of the things at hand in the desert, on the mountains, or wherever they might be, the women cooked mush and boiled vegetables or meat in this unique container, giving no thought to the hardship involved.

Melting snows and swelling buds would start the wanderers leisurely homeward, pausing on the way to reap a rich harvest

Zuñi Y-5 (ca. 1901) 1954 NT14 Plateau Yuman NT14
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from the agave, commonly called the mescal plant. Families worked in groups, first testing the plants for ripeness by thrusting a sharpened stick into their hearts. If they were soft and juicy, the harvest was on. With a wooden wedge the women pried the entire plant from the soil, cut away the outer leaves and tossed the fibrous pulp into their burden baskets. A large pit was dug, wood put in, set on fire and covered with stones. Someone accustomed to the task piled the hearts into the heated pit, using a cross layer to separate the mescal belonging to one family from that of another. These tasks were performed with high good humor. When the pit was filled to a depth of four or five feet, the mescal was covered with a layer of grass and leaves, on which dirt was piled to hold the heat. At the end of two days, the hearts were soft and brown. Each woman took her share, spread it on a wide stone surface, and pounded it into a thin sheet three feet wide and twice as long. This was quickly dried in the hot sun, then folded into a slab for convenient storing.

The mescal pit yielded the brown paint about which Carl had told me at Truxton. The stones on which the plants rested in the roasting pit were heavily coated with the burned juice. This was either scraped from the stones or soaked in water which was later evaporated by boiling. When the right consistency was reached, red mineral paint was added to thicken it to a putty-like substance of the desired shade for facial decoration.

My successor finally arrived. He was young, friendly, quick to co-operate, and his wife was charming. They were a bit shaken from the descent of the trail, and appalled at finding themselves in so deep a gorge, but quickly made their adjustment, and were eager to begin work. I remained for a few days to help them get acquainted with conditions and to check the government property, which I would turn over to him.

Again I fitted my things into the clumsy packsaddles, this time for the trip out. As I packed, the remark made by an Indian lad to a lazy boy who refused to work, ran through my mind: "Well, what are you going to do—just stand there and breathe?" With

At an elevation of 4000 ft., the Esplanade, 1 mi. wide in places, crumbles away in ragged steps through the upper strata of the Supai formation. Abruptly, vertical walls break away, dropping 800 to 900 ft. and forming the narrow inner gorge of Cataract Canyon. The Supai formation, composed of sandstone and shale, locally is called the Redwall in reference to its color, which contrasts with the Whitewall above. This is not to be confused with the geologic designation of the Redwall limestone, an underlying formation exposed downstream from Supai village in the area of the waterfalls. It is from the crumbling top of the Supai formation that storms wash huge boulders which tumble and crash to the canyon below. 133 [103]

The Factor of Water Supply

The existence of permanent water sources determined the residence pattern. The Havasupai have been described as seminomadic, but a more accurate term might be seasonally migratory. On the plateau, families sometimes built temporary brush shelters when they were harvesting pinyon nuts or other occasional crops, or when the tribe assembled for ceremonial or other purposes, but for the most part, families erected permanent structures to which they returned year after year as long as the house was deemed suitable. The presence of water within a reasonable distance was the determining factor in the location of both permanent and temporary camp sites, except those of the most transient nature. There were a number of permanent springs known on the plateau, and the karst topography provided natural reservoirs for retaining precipitation. It is speculated that the prehistoric Havasupai, with the karst examples before them and having the engineering skill and industry to build and keep in constant repair the canyon irrigation system, probably built dams on the plateau to impound water at some of the sites now similarly used by them or neighboring ranchers. 221 312 [342] [341] [241]

Water sufficient for irrigation was present at a site called Indian Gardens, which was located a short distance below the canyon rim on Bright Angel trail and which was farmed by the Havasupai in early historic times. Prospect Valley, west of Cataract Canyon, also was farmed (Spier, personal communication, 1957). In addition, several other areas, including one on the floor of Grand Canyon proper, were farmed by means of irrigation. 241 312 311

In Cataract Canyon,* a short distance above the village area, numerous springs emerge on the canyon floor, flowing over impervious shales in the Supai formation. The water is highly charged with minerals, travertine being deposited along the stream's course. This deposition accounts for some of the erratic behavior of the creek. Masses of crumbling travertine jut from the ground here and there, evidence of past shifting of the creek channel. Havasu Creek,* swollen by melting snow or desert cloudbursts, churns its banks into mud, sometimes sweeping away a man's field and the ground beneath his house. 133 312

*The names, Cataract and Havasu Canyon and Cataract and Havasu Creek, appear interchangeably in the literature and all four terms are in common usage among residents of the area. [103]

[Text continues on page 10]

slopes where storage granaries were located and where some families occupied caves and rock overhangs until 30 or 40 years ago. The humidity of the canyon makes the comparatively warmer temperatures there less bearable than those on the plateau. This, along with the scarcity of fuel, combined to make the plateau the favored winter abode.

Botanically, the plateau and the canyon floor represent the extremes within the Sonoran Life Zone. On the plateau, clumps of juniper predominate along with stands of western yellow or ponderosa pine and pinyon pine. Nearer the canyons, trees give way to sagebrush, grasses, yucca, and a variety of wild food plants including mescal. Prickly pear, yucca, mescal, and some of the other food plants of the plateau are also found on the Esplanade and at lower elevations. The change in vegetation is a gradual one from canyon rim to floor, with desert plants predominating at the lower elevations. Acacia and mesquite, Mormon tea, agave, prickly pear and other varieties of cacti, yucca, salt brush, and numerous grasses from which seeds were harvested, are found at elevations a few hundred feet above and below the canyon floor. Dense willow thickets border Havasu Creek, and this was the predominant fuel plant in the canyon until introduction of the cottonwood as a winter fuel source in early reservation days. Watercress is abundance and many flowering plants grow along the creek bottom and the irrigation ditches. Below the farm area, in places where the stream is impounded behind travertine terraces, cattail and other marsh plants abound, while only a few feet away the usual desert plants make a sharp contrast. Datura (jimson weed) is scattered everywhere in the canyon's sandy soil; the Havasupai have experimented with it as a narcotic but have rejected it.

Reservation farms occupy the canyon floor, which is 1/4 to 1/2 mi. in width. Houses are located on individual farms throughout the area. Fields lie on both sides of the creek, occupying about 140 acres of arable land. Fruit trees, still productive, and scars of abandoned fields mark an area below the village which, until about 30 years ago, was well populated. The canyon floor drops in elevation about 150 ft. from south to north in a distance of approximately 2 mi. in the cultivated area.

Cataract Canyon formerly was accessible from three directions by means of a half dozen horse trails and several foot trails which entered the canyon close to the village area. Although these old trails are sometimes used at present, the Havasupai more frequently travel the improved Topocoba and Wikapai trails, which are used also for packing tourists and supplies into Supai.

Peach trees were introduced prior to 1870 (Whiting n. d., 59), and the similarity of the Havasupai term for them to that of the Hopi demonstrates their Hopi origin (Spier 1948, 134). This refutes a popular notion that John D. Lee, a refugee Mormon, introduced peaches in comparatively recent times. Other orchard crops are pears, apricots, apples, both black and white figs.

The Economy, Old and New

The Precontact Pattern

Before pressures of the white culture were felt, the Havasupai wintered on the plateau. Men, singly or in small groups, went there on summer hunting trips. Whiting (n. d., 61) suggests that the Havasupai "conceive of their agriculture as something incidental, a supplement to a nonagricultural way of life." Whiting points out that even today, when farming is virtually their only resource, Havasupai do not take pride in their fields as Pueblo farmers do, regarding the land rather as a confining element which restricts their freedom. He states further (p. 53) that, in the prehistoric economy, neither agricultural produce nor the wild food supply was available in sufficient quantity to sustain the population, and that it was essential for each family to supplement hunting and gathering activities by farming. This view evokes the question of how the neighboring Walapai survived in a similar environment with virtually no farming.

Whiting's thesis is in contradition to Spier's that the Havasupai are so largely agriculturists that the "loss of a crop may mean a famine year" (Spier 1928, 101). Wild food plants were primarily a winter supplement to field products. Spier notes further (p. 108) that hunting is "a man's second occupation, for he relies mainly on his field products."

Perhaps the difference Whiting discerns between Pueblo and Havasupai attitudes toward farming is in part a result of natural environment. Certainly, Pueblo farmers must pit their ingenuity against desert aridity to win a harvest, while a seed dropped in a Cataract Canyon field will grow with only occasional attention from the farmer.

When adverse conditions brought Havasupai subsistence to a dangerously low level, as occasionally happened, some families would go to live with friends or relatives among the Hopi and Walapai. In turn, the Havasupai were hosts to families from both these tribes in years of bountiful harvest.

Spier (1928, 99-100) reported that the Havasupai journeyed from the plateau to the canyon in early spring, planting activities beginning in mid-April. In summer, everyone, except those who were away on trading trips, lived in the canyon village. Corn ripened for use by the middle of June, and the harvest continued until September, when other domestic crops and wild plant foods were also harvested and prepared for winter storage. By the middle of October, family groups were drifting back to semipermanent winter camps on the plateau.

When families were camped in Cataract Canyon, women made frequent gathering trips to the Esplanade. A number of springs there served as focal points for camps of certain families. Ownership of the various springs was vested in specific individuals, and both the springs and the surrounding land

434 in their absence. Significance may be found in their having solved their economic problems on an individual basis by voluntary resettlement off the reservation with a regular income.

221 461 178 From the original Havasupai annual migration cycle, with its combined hunting, gathering, and farming economy, transition to the present patchwork pattern of farming, labor-for-wage employment, and partial or complete government dependency, occurring over the last 80 year period, has produced an unevenness in adaptation of individuals within the tribe.

221 178 For many years following establishment of a subagency in Supai, certain families persisted in following the traditional pattern of winter plateau residence. Depletion of wild food plant resources and enforcement of laws restricting the hunting of larger game to a prescribed autumn hunting season probably did more than Indian Service persuasion to induce an increasing number of families to winter in the canyon. By 1950, only one old couple continued to winter regularly on the plateau. This couple, alone or with several of their adult children and their families, was absent from Supai only about four months.

[222] Maturity of the pinyon nut crop on the plateau occasions the only mass exodus of families from the canyon at the present time. For three or four weeks the pinyon forest is alive with family groups reaping the harvest and enjoying a sort of nostalgic holiday. Following the pinyon harvest, families drift back to Supai, a few of them detouring to visit at Grand Canyon or on the Walapai reservation.

729 There was speculation among interested Indian Service personnel that the 11 Havasupai World War II veterans would not settle in Supai after their horizons had been broadened by Army training and experience which included overseas service for some of them. However, 10 of them returned to their families in the canyon and to their prewar residence and employment patterns.

657 In 1951, on the recommendation of an extension agent who had surveyed the economic situation of the Havasupai Indians for the Office of Indian Affairs, Havasupai families became eligible for resettlement on the Colorado River Irrigation Project near Parker, Arizona. This program, originally designed for Navaho and Hopi resettlement, allotted to each family 40 acres of farm land with an option to lease an additional 20 acres (Kelly 1953, 90). Later, old army barracks were made available for housing. Three of the younger Havasupai men settled on these land allotments, but two of them returned to Supai. Other men who were contacted individually by the resident agent simply could not be persuaded to consider moving away from Supai.

311 The land shortage is, of course, acute on the Havasupai reservation. It was estimated in 1950 that each family camp unit was farming about three or four acres. In 1953 a government soil scientist estimated that the

This is not to suggest that Havasupai women find no fault with their position. Women under aboriginal conditions apparently chafed under physical abuse by their husbands, the practice of polygyny, and certain other conditions not to their liking. They did not always accept the inevitable with equanimity merely because it was inevitable; women were given to fighting in situations which were disagreeable to them, although they might be certain of eventual defeat. Under Anglo-American influence, the Havasupai woman appears to be even less willing to resign herself to situations which formerly were hopeless but which now appear susceptible to improvement.

The Havasupai male, on the other hand, is born into a society in which he is dominant, in which there is usually a woman to do his bidding if he chooses to command her. A boy is pampered, indulged, and relatively undisciplined or unrestrained until rather late in childhood, and stern measures then are rarely taken with him. Perhaps this absence of need for much self-discipline or self-denial furnishes a clue to why men sometimes destroy themselves or resort to violent behavior when they face disappointment or defeat. The contrasting situation for the female may suggest why women do not exhibit such extreme behavior in similar circumstances. Through a long series of small disappointments and the necessity for continuous self-discipline, the female may be conditioned to accept the larger life crises, not always with equanimity, but with some fortitude.

Women are permitted certain patterns of self-expression of a hysterical nature which may help to spend emotions arising from frustrations. These same excesses of emotional expression are not open to Havasupai men who are more likely to seek an outlet in aggressive behavior, sometimes at a woman's expense.

In comparison with neighboring women of the Hopi or Navaho tribes, the Havasupai woman occupies a position of much less security or independence. Both Hopi and Navaho women are pivotal figures in a matrilineal clan system, whereas Havasupai women, in a clanless but patrilineal and largely patrilocal society, remain in a fringe position throughout life. (Status and role for Hopi women have been documented by Simpson, 1933; Thompson and Joseph, 1944; and Thompson, 1950; and for Navaho by Kluckhohn and Leighton, 1946; Underhill, 1953; Reichard, 1934 and 1938.)

Among the sedentary and monogamous Hopi, women own the houses, house furnishings, land, seeds, field crops, and food stores. Hopi women thus are socially and economically secure regardless of marital status. In addition, women receive labor in their fields and gifts from their sons, brothers, and brothers' sons. By contrast, among the Havasupai, men aboriginally owned and, with a few exceptions still own, houses, land, and crops. Formerly, the semi-nomadic Havasupai moved from one rude shelter to another on tribally owned hunting and gathering grounds or camped seasonally at family gardening plots.

6:Schwartz A-5 (1953)1956
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Havasupai

THE HAVASUPAI 600 A.D.—1935 A.D.: A SHORT CULTURE HISTORY

By DOUGLAS W. SCHWARTZ

THE HAVASUPAI are a tribe of Yuman-speaking Indians who now live at the bottom of Cataract Creek Canyon, a side branch of northwestern Arizona's Grand Canyon (Spier 1928). When they were first discovered, in 1776 by an exploring Franciscan priest, they were leading an economically double life. In the spring and summer they irrigated corn and bean fields from an ever-flowing spring of clear blue-green water, while during the winter they migrated up to the plateau,

FIG. 1
Map of Arizona showing the distribution of prehistoric cultures (After Colton).

6: Schwartz A-5 (1953) 1956
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where they gathered and hunted the local flora and fauna until the following spring.

For some time there was indirect historical evidence that Havasupai had lived in the area since about 1500 A.D. (Schroeder 1953), but nothing definite was known of their prehistory. Archaeologically, the plateau country just south of the Grand Canyon, the winter home of the historic Havasupai, was occupied by a group called the Cohonina (Fig. 1). These people were thought to have inhabited the area between about 700 A.D. and 1100 A.D. (Colton 1939, pp. 26-29). But a blank spot existed in our knowledge of their life between 1100 A.D. and 1500 A.D. It was not known what had happened to the Cohonina after 1100 A.D., nor whence came the Havasupai, or whether there was a relationship between the two.

In the summer of 1953 I began an archaeological investigation of the canyon home of the Havasupai, with the feeling that the key to the problems in the area lay in this hitherto untouched region. This field work, sponsored by the Peabody Museum of Yale University, whose research program is supported by the Wenner-Gren Foundation for Anthropological Research, formed the basis for a Ph. D. dissertation written for the Department of Anthropology at Yale University (Schwartz 1955a).

The results of the study indicated a cultural continuum from the early Cohonina through the historic Havasupai. A summary of the conclusions is presented in the following pages. In order to separate the material into understandable units, it has been divided into periods. Each of these periods is described, as are the processes of culture change operating on it. It is with the desire of presenting something of the dynamics of Havasupai culture history that these processes are emphasized.

Period I — Exploration

Little is known of the early Cohonina people or their culture. They probably came to the plateau region south of the Grand Canyon about 600 A.D., presumably from the west. The first hundred years were a period of exploration, when the water sources were being located, favorable agricultural areas were being sought, and a few pioneering families were learning the all-important lessons of survival.

Colton (1945) has suggested that there was a population pressure along the lower Colorado River which might have forced the Cohonina and others away from the river banks and into the "hinterland." If this was so, then some of the people who were pushed out probably came into the future Cohonina homeland in small groups. This may be inferred to some extent from the small population during this period and from indications that the whole plateau had not yet been occupied.

Too little is known of the material culture of this period to characterize it, but already there were strong trade contacts with the Kayenta people to the east (Fig. 1). This is especially manifest in the ceramics. Although little comparative material is available, it might be expected

8:Service E-5 (1946) 1947
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Several changes have occurred since Spier's visits. The Indians no longer spend the fall and winter months of each year on the Plateau gathering wild foods and hunting. Males are more prominent nowadays as workers of agricultural land, possibly because this is the chief source of food, whereas in earlier times male hunting and female gathering were important supplementary food-getting activities, especially during the season of Plateau residence. White influence, too, is undoubtedly effective in promoting male predominance. Correlated with the above changes, the custom of temporary matrilocal postmarital residence is disappearing.

Out of 57 intra-village marriages in the past 30 years, 38 were clearly patrilocal, 16 intermediate, and 3 permanently matrilocal. The patrilocal couples all work on the husband's family's land, or have already inherited a share of it. All of the 16 "intermediate" couples live where they do because of various exigencies involving the inheritance of the land they work and/or the acquisition of one of the few permanent type houses. Of the three cases of matrilocality, two occurred because the male's father's household had died out. The other case is that of Spoonhead, who inherited no land from his own family. The reason for this will be mentioned later.

It therefore appears that the second of Spier's conditions has taken place to some extent, namely, an increase in male prominence with more regularity in patrilocal residence. Furthermore, this seems correlated with patrilineal inheritance of land. Apparently this inheritance, however, has not been of the sort that has furthered the patrilineal tracing of kindred. Disposal of land has often been attended by acrimonious disputes, so that one is probably justified in judging that perhaps neither individual ownership nor simple patrilineal succession are necessarily the only rules by which land is allocated. With this in mind I shall attempt to describe land rights by summing up data which involved circumstantial cases of inheritance, transactions, wills, and other overt manifestations.

Items of personal use other than land are clearly owned by the individual, and objects which are on the land—houses, crops, horses, and the few cattle—are also individually owned, for there is abundant evidence that a person can dispose of these items largely as he wishes. When he dies, much of his personal property is buried with him, his house is burned or abandoned,[4] and the crops he

[4] Almost half of the houses are now of a permanent type and are not burned at the occupant's death, but are temporarily abandoned, as he occupied four when awaked. There is no particular rule of inheritance with respect to the permanent houses, as they can be considered negligible as a factor in the discussion of inheritance. In another type of community, house ownership would, of course, be very important. See Elsie Clews Parsons, *The Hopi-Tew*

181 and winningly. It would not be an overstatement to call these people easy-going. Unpleasantness arises occasionally here as it does wherever human animals live together, but in Supai it seems of a less offensive nature. It is peaceful place where people are loathe to interfere in each other's affairs, yet ready to help when asked.

101 Leslie Spier once pointed out that culturally the Havasupais are closely associated with the tribes of the Great Basin. This is especially true of the material, economic and the social aspects of the culture. At the same time, these people are primarily agriculturalists like their eastern neighbors, the Pueblos. This places them in a distinctly intermediate cultural position.

221 [161] In aboriginal times, when the tribe was often smaller than it is today, early spring found the Havasupais returning to Cataract Canyon from the plateau where they had spent the winter hunting and gathering pinon nuts and other wild seeds. The spring planting was done and the dirt covers on their houses repaired. It was at this time that much of the food, which had been dried and stored the year before, was eaten.

[361] [439] [527] [649] During the summer everyone lived in the canyon, though trading expeditions were often sent out to neighboring tribes. When the corn and peaches ripened in September, the harvest was taken in and a dance held to which Walapais, Navajos, and Hopis were invited.

221 361 By the middle of October an exodus of families and groups of families began and within a month the entire population moved up to the cedar thickets on the plateau where semi-permanent camps were established and once more the winter activities began. This annual cycle has changed considerably, however, in the past half-century.

177 221 241 The food-getting economy of today is no longer divided between the spring and summer agriculture and the hunting and gathering of fall and winter. There is a concentration by both men and women on agriculture and remunerative employment on the plateau. This makes it possible for families to depend on food purchased from the store as well as that which they grow. The hunting and gathering aspect of their economic life has been nearly given up, making the seasonal migrations unnecessary. The [361] village is now the center of activity throughout the year.

343 ries, which, sometimes miles away from
172 the permanent village, and often in
almost inaccessible places, everywhere
occur in nooks and shelves throughout
the cañon. Equally interesting are
342 the strange, conical little sweat-houses,
343 built of sticks, grasses, etc., and closely
roofed with dirt, as well as the bark and
cedar-brush wigwams and shelters, which
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the Ha-va-su-pai build far and wide, dur-
•321] ing their winter hunts, throughout the
forest-covered plains of the desert above
and around their cañon.

438 For a few years past, the Ha-va-su-
pai have been in the habit of procur-
ing, by barter with the Hua-la-pai, cast-
off soldier and other American clothing,
which is worn to a considerable extent
291 by the men. The native costume, how-
ever, is not rare. It consists simply of
a coat made from a single deerskin, a
transverse slit in the centre serving as
neck-hole; the sleeves, of two pieces of
the same material, heavily fringed, are
attached to the edge of the skin, either
side of the neck-hole, and open down as
as far as the elbows. Save the seams
at the shoulders and from the elbows
to the wrists, no sewing is necessary in
this peculiar coat; yet it is made to fit
admirably by means of a belt or band,
with which the ends falling down front
and back are gathered about the waist.
Add to this the breech-clout of soft,
fringed doe-skin, wild-cat or rabbit skin,
close-fitting leggins fringed down the
front, — though quite as often the legs
are bare, — and a pair of heavy, doubly
or trebly, raw-hide-soled moccasins of
buckskin, which reach above the ankles
like buskins, and the dress of the Ha-
va-su-pai man is complete. To all this,
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however, the Pueblo blanket is an addi-
tional luxury, possession of which is in-
dispensable to good standing in the tribe.
The dress of the women is yet more
simple. It consists of a long fringed
apron of red buckskin, buttoned together
behind, extending from the breast —
where it is secured by a strap around
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262 are all eaten raw, or dried, and prepared
252 for food by stewing. Squashes are either
boiled or roasted, the latter most skillfully, the seeds being carefully preserved, dried, and made into food, much
the same as the sunflower seeds.

263 A remarkable and at first unplea- ant
characteristic of all these foods is the
absence of salt from them. Sometimes
the corn preparations are sweetened by
chewing and fermentation. The somewhat sweet fruit of the datila, or Spanish bayonet, is rendered sweeter by a
[251] like process, the pulp thus formed being spread out on large, closely-woven ing
screens, and dried in sheets, often several feet in extent, though less than
an inch in thickness. The manual of salt
252 more southern tribes, the ahvin of the
Zuñis, is prepared in its greatest per- the
tion by the Ha-va-su-pai from the fer-
and inner leaves of the agave, or ma- tur-
ry plant. It is gathered by the wo- ous
in great quantities throughout the ges
and upon the terraces of the cañon, and
[482] transported in large baskets, strapped pod
across their foreheads, to the great cially
beds of dry streams. Pits being dug in
the gravel and fuel collected by the
men, huge fires are built in the exca- ava-
tions, and kept burning for several hours. the
The embers are then drawn forth, and
pits lined with leaves and grasses, the
the agave thrown in, a layer like ated
lining them being added, and the hole
gravel and embers heaped above. The
[527] harvings are occasions of great fest- ivity
and merry-making. When taken out,
the agave is easily made into pulp, and
dried, either on the flat rock surface or
as in the fruit of the datila.

221 It is a remarkable fact that the Ha-
262 va-su-pai, possessing neither cattle nor
sheep, are almost exclusively vege- tari-
ans during the summer months. With
the beginning of winter, however, the
tribe, almost as a unit, repairs to the
surrounding plains, where they re- last
chiefly on the flesh of the game they
262 kill. This is made ready for use rep-

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754 versal punishment of death. Like most
752 other Indians, they have a good under-
826 standing of the practice of surgery, and a remarkable knowledge of anatomy.

Labor is not regularly divided, except
440 between the sexes; save that among the men, arrow-making and some such special arts are more practiced by those who excel in them than by others, and basket-making among the women. The men do all the hunting, bringing the game to camp, and skinning the larger kinds; the women cutting it up and preparing it for drying or cooking. Both men and women gather the agave plant, in its season, with many festivities, vying in the preparation of it for mescal, although the burden of the labor in burning it falls to the women. The men break up the soil, lay out and dig the acequias, etc., performing the heavier agricultural work, as well as the planting, while the women weed the crop and assist in hoeing. When the corn ripens, the women gather it and bring it in, make it ready, and store it in the little stone and adobe granaries under the cliffs, and in little obscure rock shelters. They also cook all foods, make baskets and most other implements of household use, while the men cut out and sew the clothing both for themselves and for the women. Much of the heavier part of the work and drudgery falls on the women, who seem, however, perfectly contented with their really hard lot.

Sedentary agriculturists in summer,
461 the Ha-va-su-pai produce immense quan-
● 221 tities of datils, mescal, water-tight basket-work, and arrows. Nomadic hunters in winter, throughout the choicest ranges of the Southwest, they have become justly famous for the quantity, fineness, and quality of their buckskins,
[241 which are smooth, soft, white as snow, yet thick and durable. These buckskins, manufactured into bags, ponchos, coats, and leggins, or as raw material, are valued by other Indian tribes, even as far east as the Rio Grande, as are the

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12: Cushing F-5 (1881) 1882
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221 alike of China or the shawls of Persia by ourselves. All this material is bartered with the Pueblos for blankets and
439 various products of civilization, the former being again traded to the Hua-la-pai for red and black paints, undressed buckskins, and mountain-lion robes. Their red paint, ochre of the finest quality, has such celebrity among Indian tribes that, reaching the Utes on the north, and the Comanches in Texas, it sometimes travels, by barter from hand to hand, as far east as to the tribes of the Mississippi Valley.

312 The engineering skill and enterprise
231 of this little nation are marvelous. Although their appliances are rude, they are able to construct large dams, and dig or build deep irrigating canals, or durable aqueducts, which often pass through hills, or follow considerable heights along shelves of rock or talus, at the bases of the rugged and crooked walls of the cañon. The acequias, which have their fountain-heads in these canals and viaducts, are wonders of intricacy and regularity; yet on uneven ground are laid out in nice recognition of and conformity to unevenness and change of level in the surface they are designed to water.

487 Most wonderful of all, however, are
491 their aerial trails. Through the western branch of the cañon, down from the Hua-la-pai country, the trail for horses as well as foot-travelers is over promontories, up shelves, along giddy narrow heights, in and out of recessions, or over stone-pocked slopes, such as would dismay civilized man, with all his means of moulding the rugged face of nature. At times, so impossible does it seem for any living thing to pass further that nowhere can the trail be traced; when a turn to some crack in the rock, almost hidden by intervening bowlders, and hewn down with stone hammers to give precarious footing, shows where it goes up or descends. Great ingenuity is shown in continuing the trail along the

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574 gether, and piteously begged me, by look and gesture, not to resent the liberty he had taken, or deprive him of his treasures.

764 When a man dies among them, he is bathed and painted, dressed in all his richest apparel, and laid, with his face toward the rising sun, to await the funeral ceremonials. Throughout the fields and orchards, usually with corn and sunflowers growing all around them, with vines and brambles covering them, are scattered little mounds of earth and ashes. These are the funeral pyres. Over the summit, a huge collection of
[768] wood is piled, and the dead, together with his various possessions, is laid upon the pile. This is lighted by the son and heir, or nearest other relative, and, as the flames shoot up and envelop the body, he who applied the light throws all his worldly possessions, together with those he has inherited, upon the burning pyre, slaying his favorite dogs and horses, and adding them to the last sacrifice. Upon the wings of the last film
[778] of smoke the soul of his father rises, to wander whither it will, — to come back, and bring the summer rain-clouds, to minister in many ways to the wants of his children; while the naked mourner sadly wends his way homeward, "to begin life anew, as did his father," he will tell you.

775 The spirits of those for whom the last offering has been neglected become unhappy and evil ghosts, which, together with the souls of the enemy whose
[725] scalp has not been taken and burned, torment the living with the weird voices of the night, or the lone moanings of
[754] the wind on the pine-covered mesas; or, as demons of disease and death, obey the behests of the dread sorcerer, or war against the good offices of the happier souls.

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●221 They are fairly acquainted with the principal constellations, giving them
805 names, and regulating the planting and hunting seasons by their movements.

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there, and plant the ear of corn they had, and it would be a means of life. So they did as she told them, and the Apache Mojaves lived above them, where the cañon was narrower. For a long time all was well, until a young Ha-va-su-pai man stole an Apache Mojave girl, which caused strife, and wars ensued, so that the Apache Mojaves were driven away. For this reason we live alone in the cañon.

"But, alas! the Coyote ate a part of the heart of the great cacique: hence, only during summer do we live in the home of the Mother of the Waters, and plant as she told us; but in winter we have to follow the deer with our father, the Coyote, and live only as he does, in houses of grass and bark; for the Mother of the Waters grew sad when her people became so foolish, and, leaving only one of her sons to take care of them, she went away to her home among the white shells, in the great world of waters.

"Do you Americans," said the old

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The /99 cont./
131 inaccessibility of their cañon home has tended to keep them
177 immune from outside influences, so that in many ways their
life is still delightfully primitive. Their typical dwelling
342 consists of a framework covered with brush or tule and some-
times with an outer covering of earth. In summer a four-post
brush shelter is erected, which affords protection from the sun and
allows free circulation of air.

262 The agave plant, cut and prepared in much the same way
as by the Apache, has always been an important article of food
among these people. Other native vegetal foods are grass seeds
224 and piñon nuts. From time immemorial the Havasupai have
(221) been hunters. On the approach of winter they left the cañon for
the upper levels, built wickiups of boughs and bark, and
spent the cold season in hunting. Deer were the principal game,
although they killed some mountain sheep and an occasional black
(251) bear. Much of the venison was cut in thin strips and dried for
237 summer use. Deerskin dressed by the Havasupai was considered
281 the best by all neighboring tribes; consequently, it not only
(439) furnished clothing, but was an important medium of barter. But
the life of the Havasupai has changed. Game is scarce, and
177 224 the Government does not willingly grant them permission to
648 hunt on the surrounding mesas, hence there is little wonder that
the wrinkled veterans long for the old days when game was
plentiful and they hunted where they would. "Now all is
changed," they say. "We cannot go out of the cañon without
asking the white man. We dare not hunt deer, as the game must
be saved for the Háiko. We are no longer men; we are like little
children; we must always ask Washington!"

241 Corn is now their chief staple, besides which they raise
262 beans, squashes, melons, pumpkins, sunflowers, peaches, apricots,
171 and figs. They prepare corn in countless ways, corresponding
252 largely to those of the Hopi. In fact, the modes of preparing
corn by all tribes of /100/ the Southwest are much the same.
Much of the crop is allowed to ripen on the stalk; this is later
ground into meal on the metate. Quantities of green corn are
harvested, roasted in large pits with the husks on, and hung to
dry. This may be ground or simply shelled and cooked, either
alone or with beans, meat, and dried squash. Like the figs, their